

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P561640

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561640
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/20/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-12-4-LD4-2LO-40-UNV-93-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3562.0 lumens
Efficiency: N/A
Efficacy: 76.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

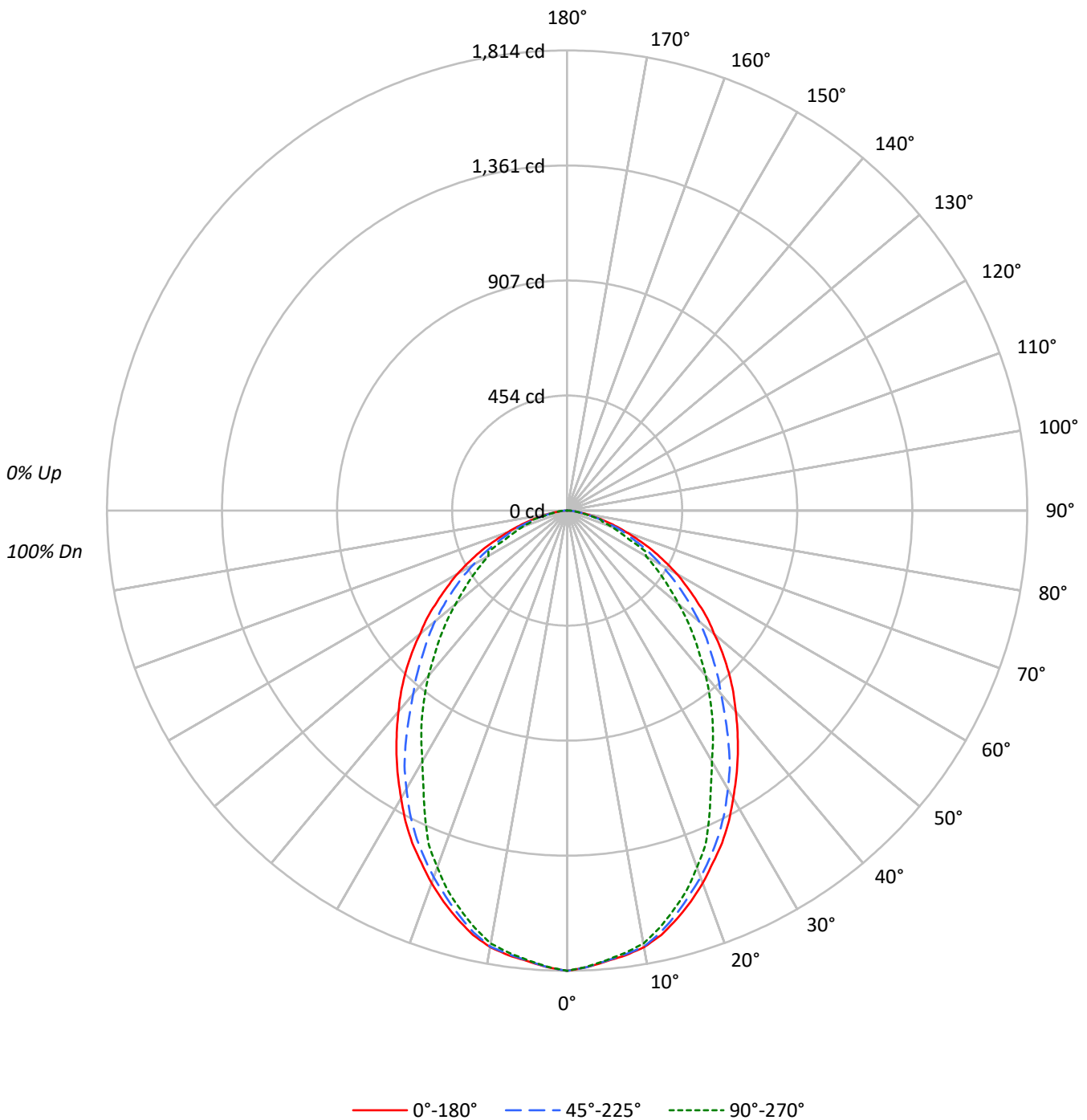
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									20									
RC	80									70									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100									100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4883	4883	4883
5°	4816	4811	4805
10°	4774	4769	4734
15°	4646	4599	4535
20°	4475	4403	4283
25°	4291	4198	3936
30°	4067	3937	3546
35°	3852	3638	3280
40°	3633	3316	2984
45°	3425	3065	2698
50°	3170	2845	2406
55°	2933	2578	2155
60°	2687	2303	1931
65°	2364	2017	1710
70°	1947	1766	1452
75°	1548	1353	1417
80°	1040	975	910
85°	648	778	908

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3425 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.9	4.7
10°-20°	463.5	13.0
20°-30°	641.7	18.0
30°-40°	684.3	19.2
40°-50°	624.3	17.5
50°-60°	489.0	13.7
60°-70°	318.7	8.9
70°-80°	141.2	4.0
80°-90°	30.3	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1274.2	35.8
0°-40°	1958.4	55.0
0°-60°	3071.7	86.2
0°-90°	3562.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3562.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1814	1814	1814	1814	1814	
5°	1783	1781	1781	1779	1779	169
15°	1668	1668	1651	1634	1628	469
25°	1445	1437	1414	1363	1326	664
35°	1173	1164	1108	1024	998	733
45°	900	881	806	738	709	693
55°	625	606	550	484	459	561
65°	371	350	317	323	268	366
75°	149	138	130	124	136	160
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1814.4	1814.4	1814.4	1814.4	1814.4
2.5°	1801.8	1801.8	1801.8	1799.8	1799.8
5°	1783.0	1780.9	1780.9	1778.8	1778.8
7.5°	1768.3	1766.2	1764.1	1762.0	1757.8
10°	1747.3	1747.3	1745.2	1734.7	1732.6
12.5°	1713.7	1711.7	1703.3	1688.6	1684.4
15°	1667.6	1667.6	1650.8	1634.0	1627.7
17.5°	1617.3	1615.2	1594.2	1577.4	1569.0
20°	1562.7	1558.5	1537.6	1510.3	1495.6
22.5°	1501.9	1501.9	1476.7	1441.1	1426.4
25°	1445.3	1436.9	1413.8	1363.4	1325.7
27.5°	1380.2	1367.6	1342.5	1271.2	1227.1
30°	1308.9	1302.6	1267.0	1174.7	1141.1
32.5°	1241.8	1231.3	1193.5	1097.1	1069.8
35°	1172.6	1164.2	1107.5	1023.6	998.5
37.5°	1103.3	1092.9	1021.5	954.4	922.9
40°	1034.1	1021.5	943.9	883.1	849.5
42.5°	969.1	952.3	876.8	811.8	774.0
45°	899.9	881.0	805.5	738.4	709.0
47.5°	830.7	813.9	744.7	675.4	641.9
50°	757.2	742.6	679.6	610.4	574.7
52.5°	696.4	673.3	612.5	543.3	513.9
55°	625.1	606.2	549.6	484.5	459.4
57.5°	560.1	541.2	488.7	427.9	406.9
60°	499.2	472.0	427.9	375.5	358.7
62.5°	432.1	411.1	373.4	329.3	350.3
65°	371.3	350.3	316.7	323.0	268.5
67.5°	304.2	293.7	264.3	234.9	226.5
70°	247.5	234.9	224.4	193.0	184.6
72.5°	197.2	184.6	169.9	153.1	146.8
75°	148.9	138.4	130.1	123.8	136.3
77.5°	102.8	98.6	92.3	86.0	83.9
80°	67.1	65.0	62.9	60.8	58.7
82.5°	39.9	39.9	39.9	39.9	39.9
85°	21.0	23.1	25.2	27.3	29.4
87.5°	12.6	12.6	14.7	16.8	18.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)